



IFW

PATENT APPLICATION  
Docket No.: 301788.3000-102

UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Gavin J. C. Braithwaite and Jeffrey W. Ruberti  
Application No.: 10/611,674 Filed Date: June 30, 2003  
Confirmation No. 5352 Group: 1774 Examiner: Not Assigned  
For: Layered Aligned Polymer Structures and Methods of Making Same

CERTIFICATE OF MAILING	
I Hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as First Class Mail in an envelope addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450	
on <u>June 9, 2004</u>	<u>Sharon R. Lloyd</u>
Date	Signature
<u>Sharon R. Lloyd</u>	
Typed or printed name of person signing certificate	

INFORMATION DISCLOSURE STATEMENT

Mail Stop Amendment or Mail Stop Missing Parts  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

This Information Disclosure Statement is submitted:

- ☐ under 37 CFR 1.129(a), or  
(First/Second submission after Final Rejection)
- ☒ under 37 CFR 1.97(b), or  
(Within any one of the following time periods: three months of filing national application (other than a CPA) or date of entry of the national stage in an international application; or before the mailing date of a first office action on the merits in a non-provisional application, including a CPA, or a Request for Continued Examination).
- ☐ under 37 CFR 1.97(c) together with either:  
☐ a Statement under 37 CFR 1.97(e), as checked below, or  
☐ a \$180.00 fee under 37 CFR 1.17(p), or  
(More than 3 months after receipt of the International Search Report, but before final action or notice of allowance, whichever occurs first)
- ☐ under 37 CFR 1.97(d) together with:  
☐ a Statement under 37 CFR 1.97(e), as checked below, and  
☐ a \$180.00 fee under 37 CFR 1.17(p), or  
(Filed after final action or notice of allowance, whichever occurs first, but on or before payment of the issue fee)
- ☐ under 37 CFR 1.97(i):  
Applicant requests that the IDS and cited reference(s) be placed in the application filewrapper.  
(Filed after payment of issue fee)

Statement Under 37 CFR 1.97(e)

- ☐ Each item of information contained in this Information Disclosure Statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement; or
- ☐ No item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the undersigned, after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of this Information Disclosure Statement.

Statement Under 37 CFR 1.704(d) (Patent Term Adjustment)

Applies to original applications (other than design) filed on or after May 29, 2000

- ☐ Each item of information contained in the Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart application and this communication was not received by any individual designated in § 1.56(c) more than thirty days prior to the filing of the Information Disclosure Statement.

Enclosed herewith is form PTO-1449:

- ☒ Copies of the cited references are enclosed.
- ☐ In accordance with 37 C.F.R. § 1.98 (d), copies of cited references (\*list reference not enclosed\*) are not enclosed as these references were entered in earlier application, U.S. Application No. [ ], to which the present application claims priority under 35 U.S.C. 120. The earlier application contains copies of the cited references.
- ☐ If copies of references [\*list references not enclosed\*] would benefit the Examiner of this case, the Examiner is invited to call the undersigned attorney and copies will be forwarded immediately.
- ☐ Listed references [ ] were cited in the enclosed International Search Report in a counterpart foreign application.

Concise Explanation Requirement (non-English references):

- ☐ The "concise explanation" requirement (non-English references) for reference(s) [ ] under 37 CFR 1.98(a)(3) is satisfied by:
  - ☐ the explanation provided on the attached sheet.
  - ☐ the explanation provided in the Specification.
  - ☐ submission of the enclosed International Search Report.
  - ☐ the enclosed English language abstract.

☐ Applicant requests that the following pending applications be considered:

Examiner's  
Initials

\_\_\_\_ U.S. Patent Application No. [ ], Publication No. [ ], Publication Date [ ],  
by [inventor(s)], filed [ ], Docket No.: [ ]

\_\_\_\_ U.S. Patent Application No. [ ], Publication No. [ ], Publication Date [ ],  
by [inventor(s)], filed [ ], Docket No.: [ ]

\_\_\_\_ U.S. Patent Application No. [ ], Publication No. [ ], Publication Date [ ],  
by [inventor(s)], filed [ ], Docket No.: [ ]

\_\_\_\_\_  
Examiner

\_\_\_\_\_  
Date

☐ A copy of each above-cited application, including the current claims, is enclosed.

☐ A copy of each above-cited application, including the current claims, is enclosed, except those entered in prior application, U.S. Application No. [ ], to which priority under 35 U.S.C. 120 is claimed.

The Examiner is requested to return a copy of the above list of pending applications indicating which references were considered with the next office communication.

It is requested that the information disclosed herein be made of record in this application.

Method of payment:

☐ A check for the fee noted above is enclosed, or the fee has been included in the check with the accompanying Reply. A copy of this Statement is enclosed.

☐ Please charge Deposit Account No. 50-1935 in the amount of \$[ ]. A copy of this Statement is enclosed.

☒ Please charge any deficiency in fees and credit any overpayment to Deposit Account No. 50-1935.

Respectfully submitted,

BOWDITCH & DEWEY, LLP

By \_\_\_\_\_

Monica Grewal

Date:

Registration No. 40,056

Direct tel.: (508) 416-2474

Telephone: (508) 879-5700

Facsimile: (508) 929-3073

Bowditch & Dewey, LLP

161 Worcester Road

P.O. Box 9320

Framingham, Massachusetts 01701-9320



PTO-1449 REPRODUCED  <b>INFORMATION DISCLOSURE CITATION IN AN APPLICATION</b>  June 8, 2004  (Use several sheets if necessary)				ATTORNEY DOCKET No. 301788.3000-102		APPLICATION No. 10/611,674	
				APPLICANT Cambridge Polymer Group, Inc.			
				FILING DATE June 30, 2003		GROUP ART UNIT 1774	
<b>U.S. PATENT DOCUMENTS</b>							
EXAM- INER INI- TIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB- CLASS	FILING DATE IF APPROPRIATE	
AA	5,458,819	17 Oct 1995	Chirila et al.	264	1.7		
AB	5,733,337	31 Mar 1998	Carr, Jr., et al.	623	11		
AC	5,756,350	26 May 1998	Lee et al.	435	325		
AD	5,962,136	5 Oct 1999	Dewez et al.	428	410		
AE	Re 36,370	2 Nov 1999	Li	424	443		
AF	6,005,160	21 Dec 1999	Hsiue et al.	623	11		
AG	6,083,522	4 Jul 2000	Chu et al.	424	423		
AH	6,179,872	30 Jan 2001	Bell et al.	623	11.11		
AI	6,280,474	28 Aug 2001	Cassidy et al.	623	16.11		
AJ	6,303,296	16 Oct 2001	Bensimon et al.	435	6		
AK	6,361,560	26 Mar 2002	Nigam	623	5.14		
<b>FOREIGN PATENT DOCUMENTS</b>							
	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION YES NO	
AL	WO 00/34442	15 Jun 2000	PCT	C12N	5/08		
AM	WO 01/92381	6 Dec 2001	PCT	C08J	5/04		
<b>OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)</b>							
AR	Adachi, E., et al., "In Vitro Formation of Hybrid Fibrils of Type V Collagen and Type I Collagen Limited Growth of Type I Collagen into Thick Fibrils by Type V Collagen," Connective Tissue Research, Vol. 14, 257-266, (1986)						
AS	Agarwal, U.S., et al., "Shear Flow Induced Orientation Development during Homogeneous Solution Polymerization of Rigid Rodlike Molecules," Macromolecules, 26, No. 15, 3960-3965, (1993)						
AT	Altman, G.H., et al., "Advanced bioreactor with controlled application of multi-dimensional strain for tissue engineering," J Biomech Eng, 124(6), 2002, 742-9 (Abstract)						
AU	Anna, S. L., et al., "Formation of Dispersions Using 'Flow-Focusing' in Microchannels," 1-10, (August 8, 2002)						
AV	Bessea, L., et al., "Production of ordered collagen matrices for three-dimensional cell culture," Biomaterials, 23(1): 27-36, (January 2002) (Abstract)						
EXAMINER				DATE CONSIDERED			



PTO-1449 REPRODUCED				ATTORNEY DOCKET No. 301788.3000-102		APPLICATION No. 10/611,674	
<b>INFORMATION DISCLOSURE CITATION IN AN APPLICATION</b>  June 8, 2004  (Use several sheets if necessary)				APPLICANT Cambridge Polymer Group, Inc.			
				FILING DATE June 30, 2003		GROUP ART UNIT 1774	
<b>U.S. PATENT DOCUMENTS</b>							
EXAM- INER INI- TIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB- CLASS	FILING DATE IF APPROPRIATE
	AA2	6,423,093	23 Jul 2002	Hicks et al.	623	5.11	
	AB2	6,471,958	29 Oct 2002	Dimitrijevic et al.	424	93.7	
<b>OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)</b>							
	AW	Birk, D. E., et al., "Collagen fibrillogenesis in vitro: interaction of types I and V collagen regulates fibril diameter," Journal of Cell Science, 95, 649-657, (1990)					
	AX	Brown, C. T., et al., "Extraction and purification of decorin from corneal stroma retain structure and biological activity," Protein Express and Purification, 25, 389-399, (2002)					
	AY	Chang, J. E., et al., "Air-interface condition promotes the formation of tight cornea epithelial cell layers for drug transport studies," Pharm Res, 17(6):670-676, (June 2000) (Abstract)					
	AZ	Dubey, N. et al. "Guided neurite elongation and schwann cell invasion into magnetically aligned collagen in simulated peripheral nerve regeneration," Exp Neurol. 1999, 158(2), 338-50 (Abstract)					
	AR2	Emslie, A. G., et al. "Flow of a Viscous Liquid on a Rotating Disk," Journal of Applied Physics, Vol. 29, No. 5, 858-862, (May 1958)					
	AS2	Engelmann, K., et al. "Transplantation of adult human or porcine corneal endothelial cells onto human recipients in vitro., Part I: Cell culturing and transplantation procedure," Cornea, 18(2): 199-206, (March 1999) (Abstract)					
	AT2	Fleischmajer, R., et al., "Biology, Chemistry, and Pathology of Collagen," Annals of the New York Academy of Sciences, Vol. 460, (December 30, 1985) (Index)					
	AU2	Germain, L., et al., "Can We Produce a Human Corneal Equivalent by Tissue Engineering?", Progress in Retinal and Eye Research," Vol. 19, No. 5, 497-527, (2000)					
	AV2	Girton, T.D. et al, "Confined compression of a tissue-equivalent: collagen fibril and cell alignment in response to anisotropic strain," J Biomech Eng, 124(5), 2002, 586-75					
	AW2	Giordano, N. and Cheng, J-T, "Microfluid mechanics: progress and opportunities," J. Phy.: Condens. Matter 13 (16 April 2001) R271-R295					
	AX2	Griffith, M., et al., "Functional Human Corneal Equivalents Constructed from Cell Lines," Science, 286: 2169-2172, (December 10, 1999)					
	AY2	Guido, S., et al., "A methodology for the systematic and quantitative study of cell contact guidance in oriented collagen gels," Journal of Cell Science, 105, 317-331, (1993)					
	AZ2	Jester, J.V., et al, "Expression of alpha-smooth muscle (alpha-SM) actin during corneal stromal wound healing," Investigative Ophthalmology & Visual Science, Vol 36, 1995, 809-819 (Abstract)					
	AR3	Kadler, K. E., et al., "Assembly of Type I Collagen Fibrils de Novo," The Journal of Biological Chemistry, Vol. 263, No. 21, 10517-10523 (July 25, 1988)					
EXAMINER				DATE CONSIDERED			



PTO-1449 REPRODUCED  <b>INFORMATION DISCLOSURE CITATION IN AN APPLICATION</b>  June 8, 2004  (Use several sheets if necessary)				ATTORNEY DOCKET No. 301788.3000-102		APPLICATION No. 10/611,674	
				APPLICANT Cambridge Polymer Group, Inc.			
				FILING DATE June 30, 2003		GROUP ART UNIT 1774	
U.S. PATENT DOCUMENTS							
EXAM- INER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB- CLASS	FILING DATE IF APPROPRIATE
	AA2	6,548,059	15 Apr 2003	Joyce et al	424	93.7	
FOREIGN PATENT DOCUMENTS							
		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION YES NO
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)							
	AS3	Kadler, K. E., et al., "Collagen fibril formation," Biochem., J., 316, 1-11, (1996)					
	AT3	Lyons, B.L and Schwarz, R.I, "Ascorbate stimulation of PAT cells causes an increase in transcription rates and a decrease in degradation rates of procollagen mRNA," Nucleic Acids Research, Vol 12, Issue 5, 1984, 2569-2579 (Abstract)					
	AU3	Masur, S.K, et al, "Myofibroblasts differentiate from fibroblasts when plated at low density," Proc. Natl. Acad. Sci, USA 93, 1996, 4219-4223					
	AV3	Maurice, D.M., et al., "The fate of scleral grafts in the cornea," Cornea, 15(2): 204-9, (March 1996) (Abstract)					
	AW3	Michel, M. et al, "Characterization of a New Tissue-Engineered Human Skin Equivalent with Hair," Society for In Vitro Biology, 1998, 1071-2690 (Abstract)					
	AX3	Nusgens, B.V., et al., "Topically Applied Vitamin C Enhances the mRNA Level of Collagens I and III, Their Processing Enzymes and Tissue Inhibitor of Matrix Metalloproteinase 1 in the Human Dermis," Journal of Investigative Dermatology 116, 2001, 853-859 (Abstract)					
	AY3	Ohgoda, O. et al., "Fibroblast-migration in a wound model of ascorbic acid-supplemented three-dimensional culture system: the effects of cytokines and malotilate, a new wound healing stimulant, on cell-migration," J Dermatol Sci, 1998, 17(2), 123-31 (Abstract)					
	AZ3	Parkinson, J., et al., "Self-assembly of rodlike particles in two dimensions: A simple model for collagen fibrillogenesis," Physical Review E, Vol. 50, No. 4, 2963-2966, (October 1994),					
	AR4	Pesek, J. J. et al, "Synthesis and Characterization of bonded phases made via hydrosilation of alkynes on silica hydride surfaces," Vol 818(2), 1998, p. 145-154 (Abstract)					
	AS4	Pins G. D., et al., "Microfabrication of an analog of the basal lamina: biocompatible membranes with complex topographies," The FASEB Journal, Vol. 14, 593-602, (March 2000)					
	AT4	Schreckenbach, A., "Macroscopic structures in liquid crystal systems prepared with spin coating," Polymer, Vol. 38 No. 12, 3069-3083, (1997)					
	AU4	Schwab, I., et al., "Bioengineered Corneas-The Promise and the Challenge," The New England Journal of Medicine, Vol. 343:136-138, No. 2., (July 13, 2000) (Editorial)					
EXAMINER				DATE CONSIDERED			



PTO-1449 REPRODUCED		ATTORNEY DOCKET No. 301788.3000-102		APPLICATION No. 10/611,674			
INFORMATION DISCLOSURE CITATION IN AN APPLICATION  June 8, 2004  (Use several sheets if necessary)		APPLICANT Cambridge Polymer Group, Inc.					
		FILING DATE June 30, 2003		GROUP ART UNIT 1774			
U.S. PATENT DOCUMENTS							
EXAM- INER INI- TIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB- CLASS	FILING DATE IF APPROPRIATE
FOREIGN PATENT DOCUMENTS							
		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION YES NO
	AL						
	AM						
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)							
	AV4	Scott, D. M., et al., "Investigation of the Attachment of Bovine Corneal Endothelial Cells to Collagens and Other Components of the Subendothelium," Exp Cell Res 144, 472-478, (1983)					
	AW4	Tsai, R., et al. "Reconstruction of Damaged Corneas by Transplantation of Autologous Limbal Epithelial Cells," The New England Journal of Medicine, Vol. 343, No. 2, 86-93, (July 13, 2000)					
	AX4	Varani, J., et al., "Modulation of adhesive properties of DEAE-dextran with laminin," Journal of Biomedical Materials Research, Vol. 29, 993-997, (1995)					
	AY4	Wang, J.H., et al, "Cell orientation determines the alignment of cell-produced collagenous matrix," J Biomach 36, 2003, 97-102 (Abstract)					
EXAMINER		DATE CONSIDERED					